

REPLACEMENT SHEET

Title: Matched Instruction Set Processor Systems and Method, System and Apparatus to Efficiently Design and Implement Matched Instruction Set Processor Systems by Mapping System Designs to Re-Configurable Hardware Platforms

1st Named Inventor: Hussein S. El-Ghoroury

Application No.: 10/074,455

Docket No.: 5444P004

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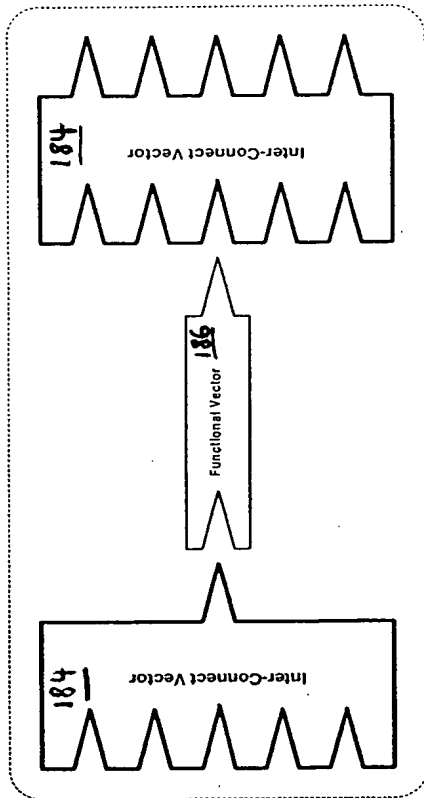


Figure 1A

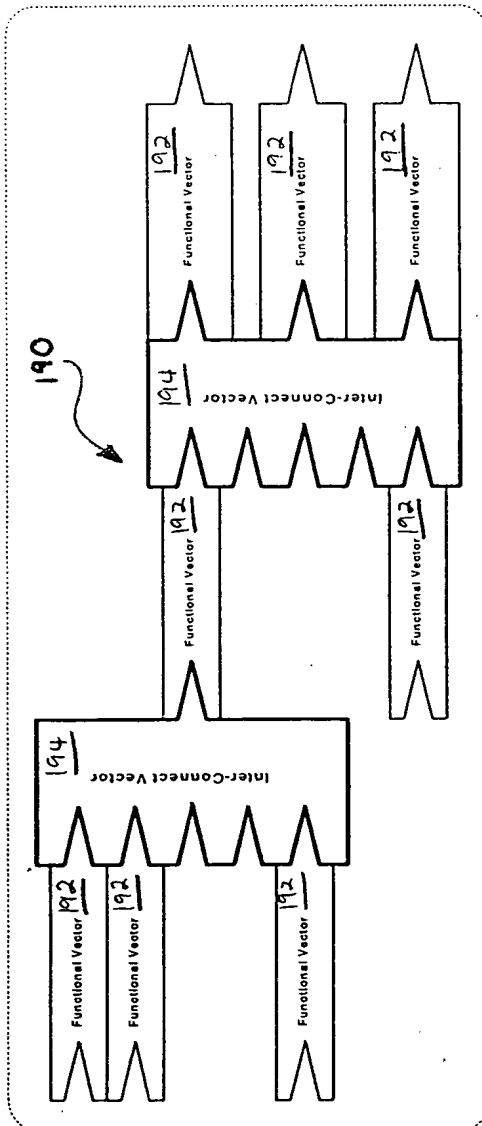


Figure 1B



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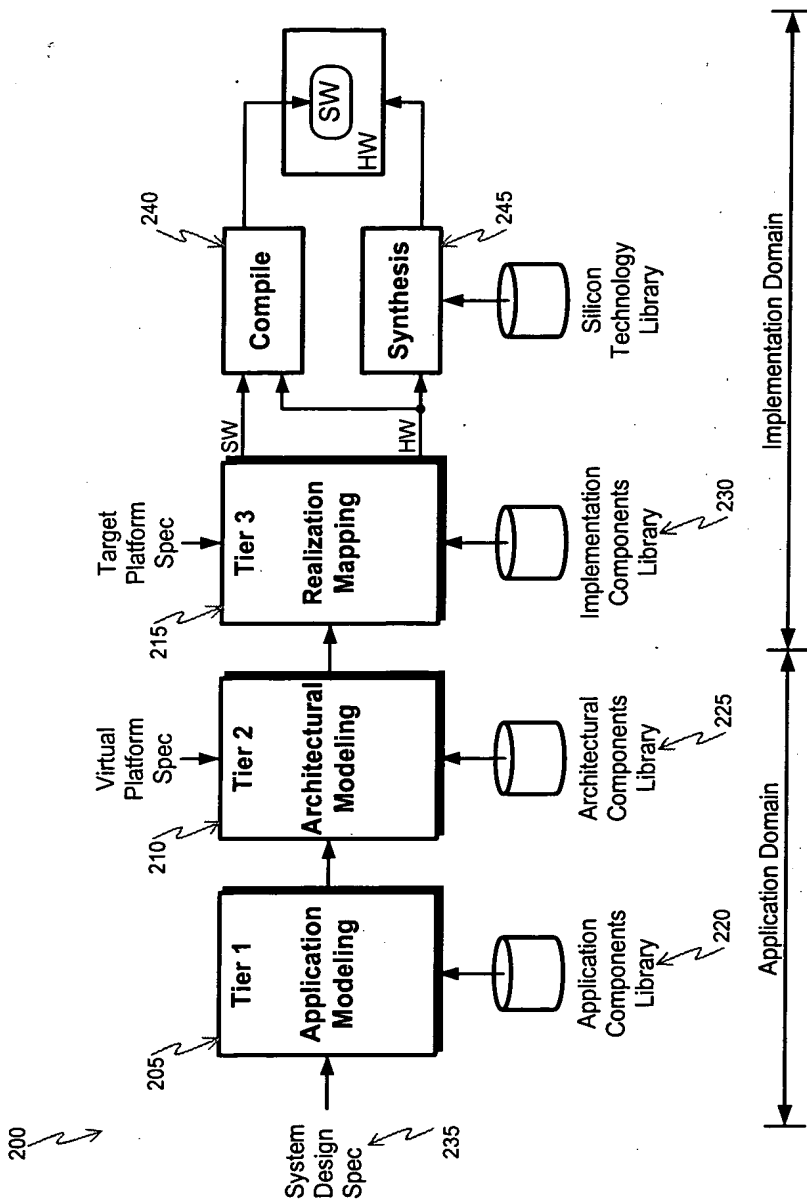


Figure 2



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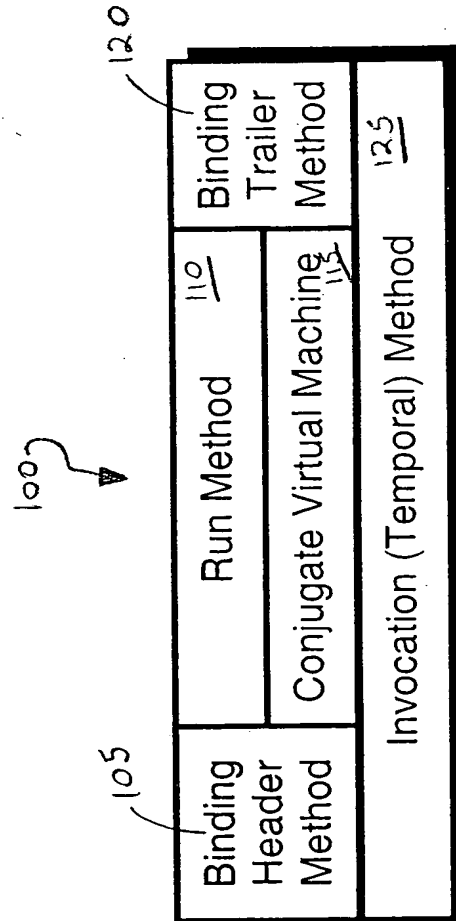


Figure 3A



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130
↓

```
/** Vector Attributes */  
string vectorName; 135  
string vectorType; 140  
string parentAS; 145
```

Figure 3B

150
↓

```
/** Header variables */  
// Add input variable declarations  
Object headerVar[]; 155  
/** Trailer variables */  
// Add output variable declarations  
Object trailerVar[]; 160
```

Figure 3C



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```
/** Vector Constructor Method: Construct an actor with the given vector name */
public udmVectorClassName (string vectorName, udmVector inVector[], udmVector
outVector[]) {
    // Call constructor in base class
    super(vectorName, parentAS, inVector, outVector);
    // Perform any initialization that needs to be done in the constructor
}

/** This method contains the actual behavior of the vector */
private boolean vectorRun() {
    // Perform the vector processing
    return true; // (or false if you want to terminate the thread)
}

/** This is the invocation method that checks to see if the vector is ready to run */
private void vectorInvocation() {
    while ( !headerDataReady() ) vectorWait();
}

/** Get the header input data */
private void getHeaderInput() {
    // Get input data from interconnect vector
    headerData = vectorGet();
}

/** Send the trailer output data */
private void sendTrailerOutput() {
    // Send output data to the interconnect vector
    vectorSend( trailerData );
}

/** run is the method that is started by Java when the thread is started */
public void run() {
    boolean runThread = true;

    // Initialize the vector
    initialize();
    while ( runThread )
    {
        // Call invocation method
        vectorInvocation();

        // Get input data
        getHeaderInput();

        // Do the processing for the vector
        runThread = vectorRun();

        // Send output data
        sendTrailerOutput();
    }

    // Perform final cleanup before vector thread exits
    wrapup();
}
```

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Figure 3D



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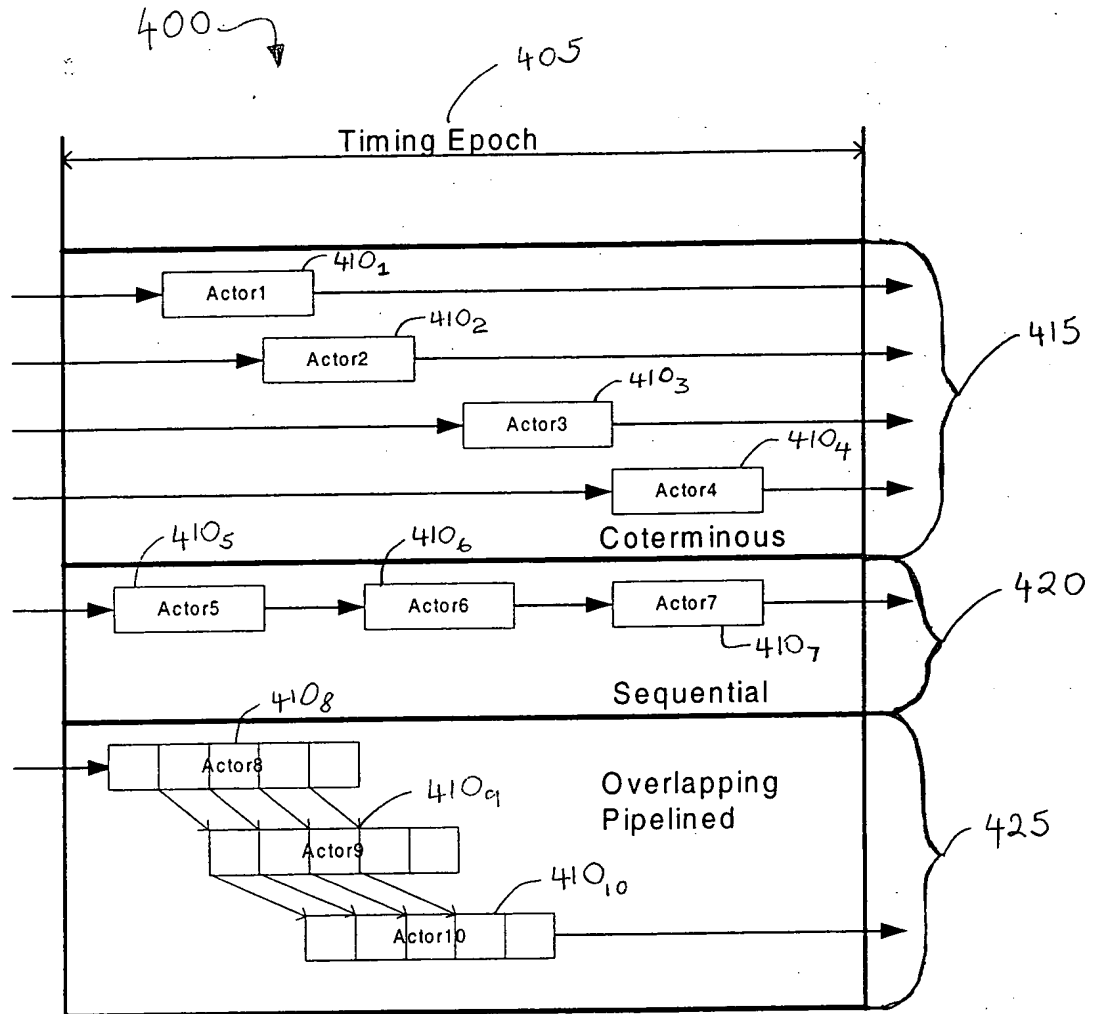


Figure 4



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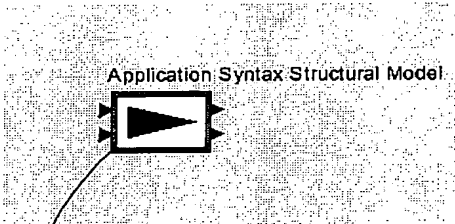


Figure 5A

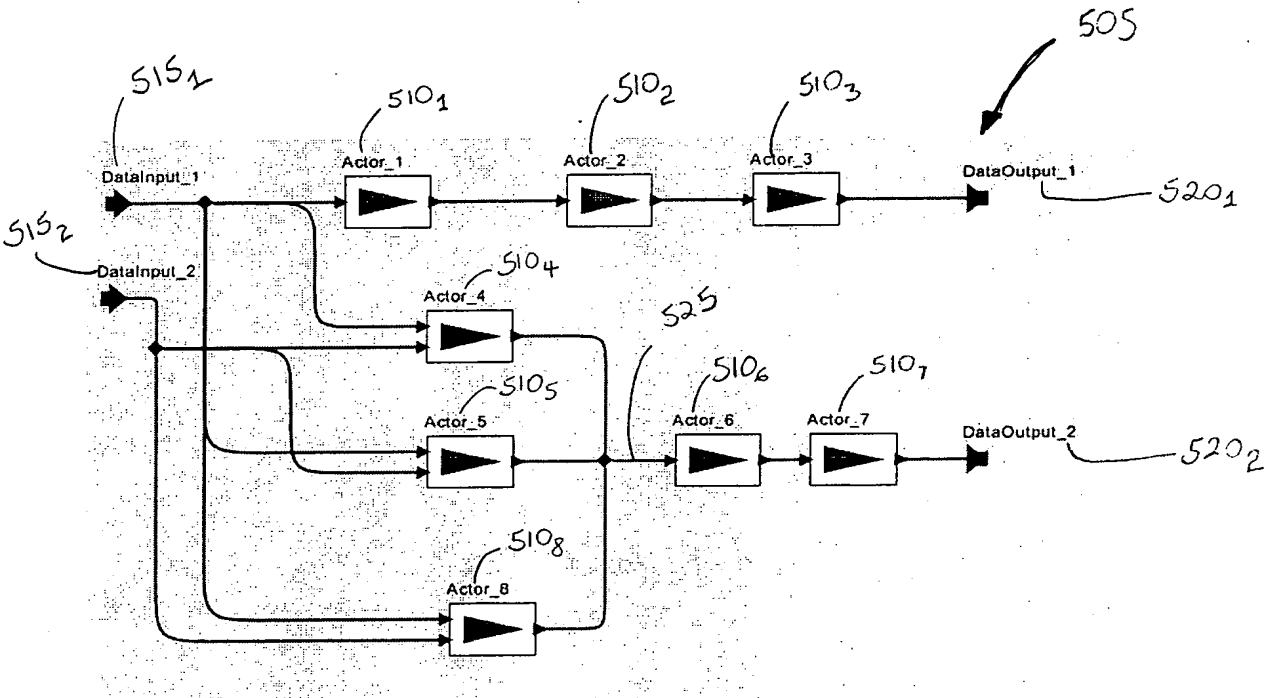


Figure 5B



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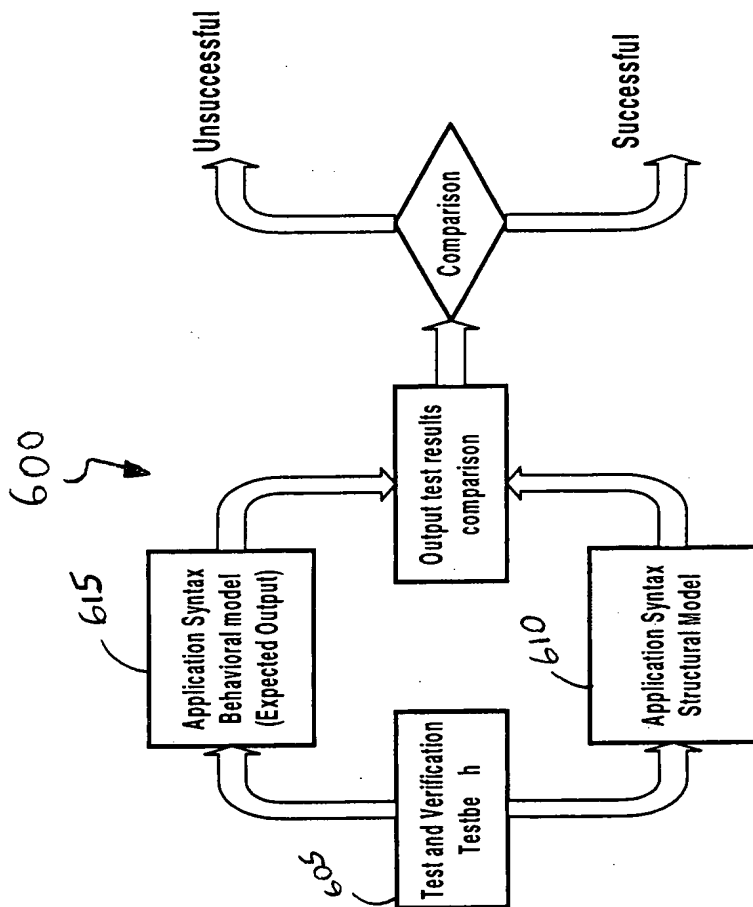


Figure 6



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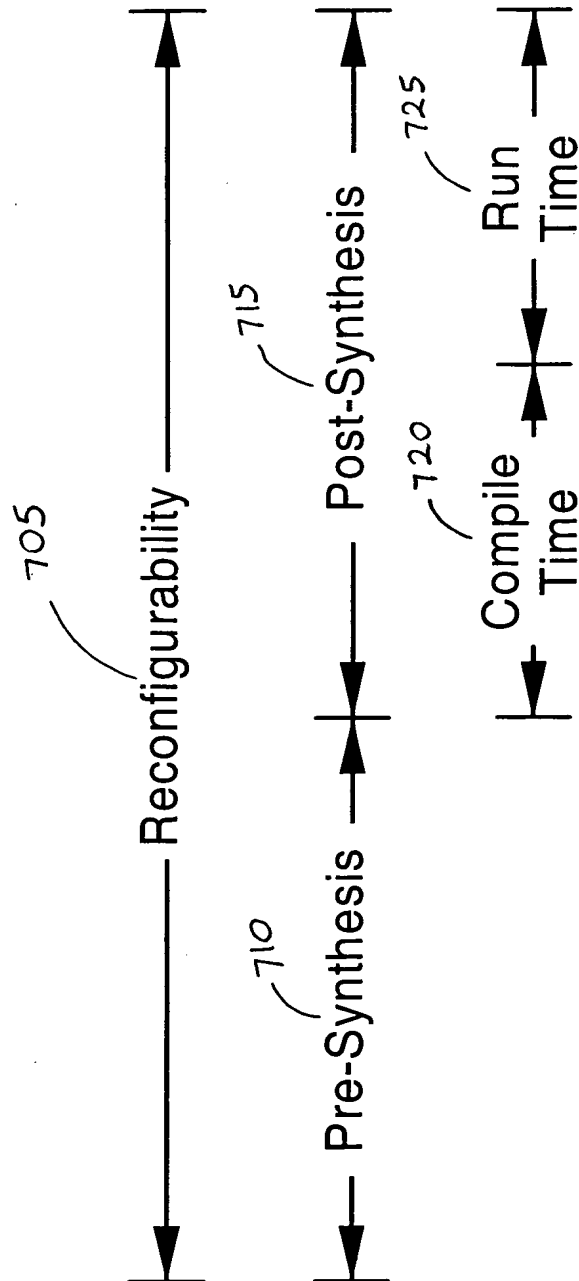


Figure 7